DATE: August 26, 2013

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SUBJECT: Reactive Nitrogen Research for San Joaquin Valley Agriculture

Dear Don:

Thank you for the opportunity to provide comments regarding EPA's effort to regulate reactive Nitrogen in the San Joaquin Valley and provide input to EPA's follow-up actions from the discussions during the workshop on Reactive Nitrogen Research for San Joaquin Valley Agriculture in Fresno, on June 4 and 5, 2013.

Groundwater and surface water degradation on the Central Coast due to nitrogen is the most severe and widespread problem we are facing, including the widespread contamination of drinking water. We established an extensive record of evidence regarding this degradation during the development of our 2012 Agriculture Order, which is available for review. Some of our findings can be reviewed here (beginning on page 48): http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/docs/ag_order/final_agorder_atta_032612.pdf

We appreciate the agricultural community's input at the workshop, but overall the workshop did not reflect enough feedback from all of the affected communities and other interested parties, and did not reflect the current literature and knowledge about nitrate issues. The summary of comments and recommendations are mainly coming from the agricultural stakeholders, which puts great emphasis on more research. We disagree that this should be the main focus. There

is already extensive research that demonstrates the severity of water quality degradation, the costs to society for this pollution, and methods that can be used to reduce pollutant loading.

We recommend that you review the information already developed regarding practices, methods, and controls that agricultural operations can implement to substantially reduce the amount of nitrate being loaded to groundwater and surface waters. Also, we recommend that you review the efforts already underway to address the nitrate problem. For example, there is a comprehensive effort underway and nearing conclusion—The California Nitrogen Assessment at UC Davis's Agriculture Sustainability Institute. They started in 2009 with a grant from the Packard Foundation, and their results are currently undergoing peer review. They have a large team of experts covering several fields of expertise, and an advisory panel with 350 members that represent many stakeholder groups, and an extensive stakeholder participation and review process. Here is a summary from their website:

The California Nitrogen Assessment is an ongoing project of the Agricultural Sustainability Institute. The Assessment is currently going through a rigorous scientific review process and will soon be opened up for stakeholder review. But to keep the assessment process open and iterative, we would like to share some initial findings to help interested stakeholders get a sense of the information the Assessment will deliver. Download the PDF (4 MB) to see some initial findings. Contact us to be added to our outreach list for the Assessment's stakeholder review stage.

Their goals:

- *Gain a **comprehensive view of N flows in the state**, with emphasis on agricultures' roles.*
- *Provide useful insights for stakeholders into the **balance between the benefits of agricultural nitrogen and the effects of surplus nitrogen** in the environment.*
- ***Compare options**, including practices and policies.*
- *Move beyond "academic business as usual" to more effectively **link science with action** and to produce information that informs both policy and field-level practice.*

A summary of the project:
http://asi.ucdavis.edu/research/nitrogen/Current_April%202013%20CNA%20project%20summary%20with%20stakeholder%20engagement.pdf

The comprehensive table of contents for the report they are publishing (see chapter 7, and section 7.1 and 7.2):
http://asi.ucdavis.edu/research/nitrogen/CaliforniaNitrogenAssessment_Table%20of%20Contents_6June2013.pdf

We recommend that you review efforts like this and others and leverage them, and not duplicate efforts, and not start from the beginning with the assumption that little is known.

Also, any effort to resolve the nitrate issue must move beyond research about nitrate efficiency, and must address overall loading. Even with increased fertilizer application efficiencies, the loading will remain massive and will continue to degrade water quality and incur costs to society on an enormous scale. The Ag industry needs to develop new ways of growing food that do not

require massive loading of nutrients to the environment and subsequent degradation. Simple fertilizer efficiencies will help, but will not address the actual problem of mass loading.

We recommend that you focus on research to determine the amount of loading (pounds per acre) that will achieve and protect water quality standards over the long-term. This will require basin-specific modeling for groundwater and surface water basins, based on the specific characteristics of those basins. The regulatory approach should then be to require growers to achieve the load limits on a defined schedule.

Thank you for your efforts to regulate the loading of Nitrogen to air and water in a holistic manner. We are looking forward to working and cooperating with EPA Region 9 in developing meaningful and effective tools to regulate reactive Nitrogen.

In you have any questions, please contact me.
Thank you,

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